

Bulletin No. CWT-1

May, 2002

**PRESSURES AND TEMPERATURES:** In selecting any type of plastic pipe for any installation, consideration must be given to pressure ratings and temperatures. Pressure ratings go **down** as temperatures go up. Exposure to weather temperature variations, heat of sun, or other heat factors should always be taken into account. All Cresline-West Specification Sheets include "Pressure Rating" tables for the respective pipes.

**CHEMICAL RESISTANCE:** All types of plastic pipe are highly resistant to a wide variety of corrosive chemicals. As a guide for the type of pipe best suited to resist corrosion of a specific chemical, please refer to the Chemical Resistance Chart, Bulletin No.CWT-4. When consulting the chart, please bear in mind that plastic pipe is not a "cure all" and, in some cases, may only provide longer life.

**OILS AND SOAPS:** PVC pipe is the type best suited for handling most of these materials. Polyethylene pipe is not recommended for the transmission of these materials.

**PLASTIC THREADED CONNECTIONS:** When threading plastic to plastic or plastic to steel, precaution should be taken to prevent excessive tightening, causing damage to the plastic fitting. **The correct degree of tightness may be determined by threading the connection hand tight, plus a quarter to half turn with a wrench.** Do not use Pipe dope. However, the use of Teflon tape or Permatex #2 is recommended.

**THREADING AND MACHINING:** Only PVC Schedule 80, or heavier wall pipe, is suitable for threading. Either standard hand pipe tools or a pipe threading machine can be used. Dies must be sharp and clean. A 5% negative rake angle and maximum clearance are preferable. Care should be taken to center die on the pipe and align thread to prevent reducing the wall excessively on one side. A tapered plug should be tapped firmly into the end of the pipe to prevent digging into end of the pipe. This also corrects any ovalness that may be present.

**BENDING:** In bending PVC, excellent results can be obtained by heating the pipe in a fluid bath or hot air oven at 225° F. for five minutes and bending it around a form of corresponding radius. To prevent flattening, the pipe can be filled with sand or bent around a pipe bending form grooved to the depth and the same radius as the outside diameter of the pipe. Due to a certain amount of recovery, the pipe should be bent beyond design to allow for this spring-back. After bending, the pipe should be cooled with water while still on the form. Do not use PVC pipe that has been bent in a pressure system.

**NOTE: DO NOT USE PLASTIC PIPE AND FITTINGS FOR COMPRESSED AIR SYSTEMS.**

(OVER)

**EXPANSION AND CONTRACTION:** Highly important is the variation in length of plastics when temperature is changing. This fact should always be taken into account when installing pipe lines. The following figures may be used as a guide to determine expansion and contraction:

ABS-----6" per 1000' per 10° F. temperature change

PVC-----4" per 1000' per 10° F. temperature change

PE (Polyethylene)-----7" per 1000' per 10° F. temperature change

CPVC-----4" per 1000' per 10° F. temperature change

(Above applies to all pipe sizes)

**SUPPORTS:** Special care must be exercised in the spacing of supports on horizontal runs of plastic pipe. Supports should have a reasonably broad contact surface. Wires and rods are not recommended if in direct contact with the pipe.

The following table is based on PVC Schedule 40 pipe filled with water.

PIPE SIZE	SPACING FT.		
	AT 60° F	AT 100° F	AT 120° F
½"	4½	4	2½
¾"	5	4	2½
1"	5½	4½	3
1¼"	5½	5	3
1½"	6	5	3½
2"	6	5	3½
2½"	7	6	4
3"	7	6	4
4"	7½	6½	4½
6"	8½	7½	5

For fluids twice the specific gravity, use twice the number of supports suggested above.

For polyethylene pipe, use twice the number of supports.

For Schedule 80 pipe, spacing may be increased 20%.

For SDR 13.5, SDR 26, and SDR 21, decrease spacing 25% - 50%.

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